

PERIODICAL ROOM  
RECEIVED

371.425  
N2766

Engineering  
Library

JAN 4 1916

UNIV. OF MICH.  
LIBRARY

6be

# **NATIONAL ASSOCIATION of CORPORATION SCHOOLS**

**Bulletin**

25 Cents a Copy

\$2.00 For a Year

Volume III

January, 1916

## **Association Activities**

---

### **Instruction Departments of the Southern Pacific**

*By Norman Collyer and T. G. Gray*

---

### **The College of Standard Oil**

---

### **School Efficiency Plan Urged for the South**

---

### **Taking a Census of Bronx, New York, Industries**

---

**PUBLISHED BY ORDER OF THE  
EXECUTIVE COMMITTEE**

# The National Association of Corporation Schools

Headquarters, Irving Place and 15th Street, New York City

---

## Objects

Corporations are realizing more and more the importance of education in the efficient management of their business. The Company school has been sufficiently tried out as a method of increasing efficiency to warrant its continuance as an industrial factor.

The National Association of Corporation Schools aims to render new corporation schools successful from the start by warning them against the pitfalls into which others have fallen, and to provide a forum where corporation school officers may interchange experiences. The control is vested entirely in the member corporations, thus admitting only so much of theory and extraneous activities as the corporations themselves feel will be beneficial and will return dividends on their investment in time and membership fees.

A central office is maintained where information is gathered, arranged and classified regarding every phase of industrial education. This is available to all corporations, companies, firms or individuals who now maintain or desire to institute educational courses upon becoming members of the Association.

## Functions

The functions of the Association are threefold: to develop the efficiency of the individual employe; to increase efficiency in industry; to have the courses in established educational institutions modified to meet more fully the needs of industry.

## Membership

*From the Constitution—Article III.*

SECTION 1.—Members shall be divided into three classes: Class A (Company Members) Class B (Members), Class C (Associate Members).

SECTION 2.—Class A members shall be commercial, industrial, transportation or governmental organizations, whether under corporation, firm or individual ownership, which now are or may be interested in the education of their employes. They shall be entitled, through their properly accredited representatives, to attend all meetings of the Association, to vote and to hold office.

SECTION 3.—Class B members shall be officers, managers or instructors of schools conducted by corporations that are Class A members. They shall be entitled to hold office and attend all general meetings of the Association.

SECTION 4.—Class C members shall be those not eligible for membership in Class A or Class B who are in sympathy with the objects of the Association.

## Dues

*From the Constitution—Article VII.*

SECTION 1.—The annual dues of Class A members shall be \$50.00.

SECTION 2.—The annual dues of Class B members shall be \$5.00 and the annual dues of Class C members shall be \$10.00.

SECTION 3.—All dues shall be payable in advance and shall cover the calendar year. Any members in arrears for three months shall be dropped by the Executive Committee unless in its judgment sufficient reasons exist for continuing members on the roll.

---

## Officers 1915-1916

### President

John McLeod  
Carnegie Steel Company

### First Vice-President

Herbert J. Tily  
Strawbridge & Clothier

### Second Vice-President

Harry Tipper  
The Texas Company

### Secretary

Lee Galloway  
New York University

### Treasurer

George B. Everett  
National Cloak & Suit Company

### Executive Secretary and Assistant Treas.

F. C. Henderschott  
The New York Edison Company

### Executive Committee

A. F. Bardwell  
The Yale & Towne  
Manufacturing Company

Jacob Yoder  
The Pennsylvania Railroad Company

M. W. Mix  
Dodge Manufacturing Company

Robert C. Clothier  
The Curtis Publishing Company

William D. Kelley  
Consolidated Gas Company  
Of New York

C. R. Dooley  
Westinghouse Electric &  
Manufacturing Company

L. L. Park  
American Locomotive Company

H. G. Carnell  
The National Cash Register Company

F. C. Henderschott  
The New York Edison Company

---







# The National Association of Corporation Schools

## Bulletin

Published by Order of the Executive Committee  
Edited by F. C. Henderschott, Executive Secretary

25 Cents a Copy

\$2.00 For a Year

Volume III

January, 1916

No. 1

### PROGRESS OF STATE LEGISLATION FOR BROADER EDUCATION

The New York *Evening Post* recently published an editorial which contained so much information of value relating to the progress of industrial education that we are re-producing the editorial:

State organization of vocational school systems has had almost no expansion during the last two years. The Bureau of Education reports that no change has taken place in 1915 in the number of States having such systems, and none were added during 1914. This seems a sad slump when we consider that in 1913 three States passed laws for general aid to vocational schools, and four more amended and extended previous measures—all States high in population and wealth, too. It cannot be said that the movement has reached its normal limits of growth, for the roster now includes only Massachusetts, New York, Pennsylvania, New Jersey, Wisconsin, Indiana and Connecticut, with a second list of seven States in which State aid is given approved municipal systems. But States like Ohio and Illinois do not appear even in the latter group. One explanation doubtless lies in the growth of city systems of vocational schools, which are more than a stop-gap for most communities. Another is the recent lack of agreement among advocates of legislation for vocational training. In Illinois, for example, three bills were introduced in the last Assembly, but the fight between the advocates of "dual" and "Unitary" control was so bitter that it killed all chance of doing anything at all.

While it is true, as pointed out in the *Post*, that the States have been slow in adopting broader educational systems with special reference to industrial and agricultural training the situation is not without its rays of hope. In many municipalities extensive educational movements have originated and are progressing satisfactorily. Lack of legislation along these lines by the different States can be attributed more to a desire to ascertain just what legislation will be most efficient rather than lack of interest in the subject.

The National Association of Corporation Schools at this

339488

writing has Class "A" memberships located in seventeen of the different States. This is an indication that the movement for broader education with special reference to industrial training is really progressing rapidly.

---

### **THE RELATION OF TRAINING TO AMERICAN INDUSTRY**

The National City Bank of New York is sponsor for a new organization known as the American International Corporation. The chief aim of this new organization is to promote extension of the foreign trade of the United States through the establishment of American banks in foreign countries which will finance trade extension.

The significance of this movement is difficult to estimate. It must be considered in its relation to other movements. It is of vital importance that the industries of United States make it as easy as possible for foreign countries to purchase American products. However, when the conflict in Europe is finally terminated, Germany, England, and in some degree France, and other nations involved, will again seek to extend their commerce. This is the situation which every American business man is looking squarely in the face.

Frank A. Vanderlip, President of the National City Bank and Chairman of the Board of Trustees of the American International Corporation, in a recent address, suggested a basis by which American industry may become independent of present industrial conditions or independent of the European War and its relation to American industrial conditions.

Mr. Vanderlip, who was down on the program to speak on "Some Present Economic Aspects," said that after several years of light trade and slack industry of dormant enterprise and of small ambition for expansion, the business world was seeing signs of better times.

The speaker said there was an easy-going optimism in some quarters which seemed to believe that the enormous purchases would go on somehow, because the chief buyers must have the goods. This was the theory, Mr. Vanderlip said, back of the criticism of the recent \$500,000,000 loan to Great Britain and France. He insisted that the theory of imperative purchases was erroneous.

After referring to the great stimulus given the industries

of this country by the war, the vast foreign trade balance in our favor giving an unparalleled easy-money situation, and an unexampled crop, Mr. Vanderlip said it seemed reasonably clear this country might look forward for some time to a tremendous volume of business. The speaker said the products and resources of the United States were so well balanced that they were more nearly mutually supporting than those of any other country in the world. Continuing, he said:

"When we are doing the amount of construction which our national growth requires we have good times generated within our borders with little help from abroad. That is a position that we want to get into now. In the past we have had to look to Europe for capital to finance every great movement in our development. Under present conditions we could not do that, and fortunately have no need for doing it. There is capital available in this country to inaugurate enterprises that will employ every man in the country without a dollar's worth of war business. If conditions can be created that will give confidence to capital, so that the owners of it will be disposed to invest it freely both in internal development and in granting external credits which, in turn, react favorably upon our industries, we will become quite independent of war orders."

The German people attributed the rapid extension of German goods into foreign nations, prior to the outbreak of the war, to the efficiency with which German workingmen could produce. If American workers are to compete successfully with the workers of Germany and England and other foreign countries, after the close of the war, American industry must have as efficient workers as can be produced by any other nation. Perhaps the rapid growth in membership in our Association, especially of the past few weeks, may be attributed at least in some degree to a more complete recognition of this fact.

Sentiment will play but a small part in the work of industrial progress. Goods and prices will count just as goods and prices have always counted in the world's trade. American industry will need not only capital with which to finance foreign sales, but American industry will also need skilled, trained workers with which to manufacture and market in competition with skilled and trained workmen of other nations. A part of this skill and training can be acquired through the Corporation Schools, but the educational system of the United States must also contribute in a greater degree in this respect than in the past,

### **ULTIMATE STRENGTH OF OUR ASSOCIATION**

Edward N. Hurley, Vice-Chairman of the Federal Trade Commission, in an address before the Association of National Advertisers, referred to the number of corporations in this country and what they are doing. This information should be of especial interest to members of The National Association of Corporation Schools, as it gives an idea of the possible ultimate membership which may be gained.

"Leaving out of consideration the banking, railroad and public utilities corporations, and referring only to those that have to do with trade and industry," said Mr. Hurley, "we find that there are about 250,000 business corporations in this country. The astonishing thing is that of those, over 100,000 have no net income whatever. In addition, 90,000 make less than \$5,000 a year, while only 60,000 the remaining, the more successful ones, make \$5,000 a year or over. Twenty thousand have sales of less than \$100,000; 20,000 more sell from \$100,000 to \$250,000; 10,000 additional from \$250,000 to \$500,000; 5,000 corporations ship annually \$500,000 to \$1,000,000 worth of goods; 4,500 have total sales from \$1,000,000 to \$5,000,000, while only 462 industrial and mercantile corporations do an annual business of \$5,000,000 or more."

At the time this article is written our Association has a Class "A" membership of ninety. It is reasonable to suppose that this number can be increased, possibly during the coming year, to approximately two hundred. In addition to the 462 trade institutions mentioned by Mr. Hurley, which have a business in excess of \$5,000,000 a year, must be added, the larger railroad systems, financial institutions and utilities corporations, perhaps a total of 150 more.

On this basis The National Association of Corporation Schools may confidently expect an ultimate Class "A" membership of close to five hundred. Our influence and power to benefit American industry cannot at this time be accurately measured, but that our Association is destined to play an important part in the ultimate position of the United States as an industrial nation cannot be doubted.

---

### **THE BEST KIND OF EDUCATION**

Dr. Charles W. Eliot, president emeritus of Harvard University, once said: "As I have seen more and more education during my professional career, I have come more and more firmly

to the conclusion that the most effective kind of education is obtained at every stage, not by listening and reading, but by observing, comparing and doing. The very best kind of education is obtained in doing things one's self under competent direction and with good guidance."

### PUBLICITY IN A POOR CAUSE

It is natural enough that there should be a difference of opinion in connection with the working out and instituting of a more comprehensive educational system for the United States. Perhaps this is the largest single undertaking since the Civil War.

There are those who believe that ultimate changes in national life, due to a broader and more complete educational system, will surpass the changes of any period in the history of our country.

Dr. Benjamin Ide Wheeler, President of the University of California, and a recognized educator of good standing, is against Vocational Training in the public schools and is in favor of "higher education" which the *St. Louis Star* claims is the "chief failure of our public school system."

Mrs. Ella Flagg Young, until recently superintendent of education in Chicago, has also taken an antagonistic attitude to a broader educational system, especially to that part of the system which applies to industrial education; and Frederick W. Roman, Professor of Economics in the University of Syracuse, in his address before the National Education Association at its recent annual meeting, proclaimed, "our capitalists have already robbed our farms and our mines and the natural resources of the country and we are now asked to accept a system of education which looks to the exploiting of our children."

As against these extreme views Dr. William A. White, superintendent of a federal hospital for the insane at Washington, D. C., is quoted as having said—at a meeting of the Massachusetts Mental Hygiene Association—"education of children of poor parents above their condition in life should be stopped as a means of improving social conditions." Dr. White goes even further. If he is correctly quoted, he said, "the girls who go to school and learn a little algebra, a little Latin, some history, and some music are spoiled for their position in life and are no good for anything else. The same is true of a child born of a bricklayer. Vocational psychology is needed to apply the proper instruction."

Just what vocational psychology is Dr. White neglects to



state. After all to the average normal mind it is possible to conceive that the child of a bricklayer may rise as high as the child of a rail-splitter. Abraham Lincoln, it will be recalled, sprung from fairly lowly parents and history is cluttered with similar cases. For the sake of comparison let us not confine ourselves to statesmen, but consider music, art, oratory; in fact, in all the professions, arts and sciences, children of the lowly have risen to positions most high.

It is rather unfortunate that those who hold extreme views receive a greater degree of exploitation, especially in the daily press, than is accorded to others whose minds may work less radically but more effectively.

Industry recognizes that the broad-understanding mind cannot be developed through narrow technical teaching. Industry requires loyalty and confidence, initiative and similar characteristics. Loyalty is reaction to a cause. It can best be developed by practice of the Golden Rule. Confidence is the result of attainment and initiative is not encouraged by dogmatic authority and suppression.

The industrial corporation is justified in doing only so much educational work on behalf of its employes as is required to operate at a high standard of efficiency.

Other things being equal the trained mind always wins over the untrained mind. But as industry and agriculture are the chief supports of schools both public and private—industry may be pardoned for an interest in the character and standards of our educational institutions.

---

### **RECOGNIZING THE VALUE OF INDUSTRIAL TRAINING**

It is interesting to trace educational development in communities. In a recent issue the *Reading Eagle* devoted a full page to an article describing development in teaching practical arts in that city. The article is composed, in the main, of a report submitted to Governor Brumbaugh by Mr. W. E. Hackett, for many years director of practical arts in the Reading schools. Mr. Hackett has been called into a larger field of activity and will assist in working out a continuation school system for Pennsylvania as defined by the Cox-Brumbaugh Law which became effective January 1st.

The article is interesting because it deals with psychological factors which can be found in almost every community. When



the local school board, stimulated by the aggressiveness of its superintendent, started the movement for industrial training it was regarded as a "fad" and of course there was prejudice. Back in 1891 the movement was commenced but it did not develop far until there was organized opposition and for a time this opposition was victorious. The plan for a central manual training high school was defeated in 1892 and a little later shop work was discontinued in the Boys' High School. And then the voters and the fathers and mothers began to sense the real meaning of industrial training. The work which had been discontinued or voted down was renewed and industrial education by the teaching of practical arts has progressed until to-day Reading is one of the most progressive of American cities. Almost every art, calling or profession is taught and the boys and girls of that community have profited as the result.

Mr. Hackett, in laying down his work, realizes that the movement has become general. In closing his report he says:

"Reading shows up very creditably when compared with other cities as shown by the recent survey of manual, domestic and vocational training in the United States. From this survey we learned that we rank high. A great deal more must be done in the future in order to keep pace with the demands of the day in the progress of many other school systems."

Mr. Hackett then proceeds to enumerate the particular facilities that are needed in Reading and closes with this optimistic note:

"We are reasonably assured of all these with the present interest shown by the superintendent and the Board of Education."

Thus it is noted that opposition has disappeared. The value of industrial training is recognized both for the boys who are to go into industry, and in the teaching of home economics for the girls who are to go into and make the future homes.

The story of the development in Reading can be duplicated in almost any community where industrial or broader education has been inaugurated. The day is not far distant when the momentum back of the movement for broader education will be so great that local prejudice and opposition cannot prevail.

---

"There are always a lot of good fiddlers in the poor house."

### **NEW MEMBERS**

Since the last membership statement appeared in the BULLETIN the following new members have been received:

#### **Class "A"**

Chicago Telephone Company, Chicago, Ill.—Mr. C. C. Curtis.  
Fels & Company, Philadelphia, Pa.—Mr. Maurice Fels.  
H. J. Heinz Company, Pittsburgh, Pa.—Mr. Howard Heinz.  
Kops Brothers, Irving Place and 16th Street, New York City—  
Mr. Waldemar Kops.  
New England Telephone & Telegraph Company, Boston, Mass.—  
Mr. E. M. Hopkins.  
Southern Bell Telephone & Telegraph Company, Atlanta, Ga.—  
Mr. Kendall Weisiger.  
Southwestern Bell Telephone System, St. Louis, Mo.—Mr. B. S.  
Read.  
Standard Fashion Company, 16 Vandam Street, New York City  
—Mr. John T. Scanlon.  
John B. Stetson Company, Philadelphia, Pa.—Mr. Mont H.  
Wright.  
The Warner Brothers Company, Bridgeport, Conn.—Mr. L. T.  
Warner.  
Westinghouse Air Brake Company, Wilmerding, Pa.—Mr. C. H.  
Smith.

---

### **BOOKS RECEIVED**

"Drink and Be Sober," by Vance Thompson. Published by  
Moffat, Yard & Company.

"Short Talks on Retail Selling," by S. Roland Hall. Published by Funk & Wagnalls Company.

---

### **BRITISH INDUSTRIAL TRAINING**

A scholarship and an exhibition have been founded at the University of Leeds for the purpose of giving the holders a training such as will enable them to assist in the development of the industry. A sum of about \$22,500 has been placed in trust for the purpose by two Whitehaven manufacturers engaged in the leather and coal industries, respectively, and this will provide a scholarship of the annual value of \$450.

## ASSOCIATION ACTIVITIES

---

### **Meeting of Committee on Revision of the Constitution—List of Changes Recommended—Class "A" Yearly Dues Increased to \$100—Other Changes Suggested**

The Executive Committee at its July meeting appointed the officers of our Association as a Committee on Revision of the Constitution. It was set forth that at the time our Association was formed there was little to guide those who drew the tentative constitution as to ultimate requirements in the way of revenue to finance the activities which would develop. The Committee was requested to make its report at the January, 1916, meeting of the Executive Committee.

The Committee met in New York on December 7th, President McLeod, First Vice-President Tily and Executive Secretary Henderschott being in attendance. All recommendations which had been received through the Executive Secretary's Office were considered and the Constitution was taken up section by section and the following changes will be recommended:

### ARTICLE II

#### OBJECTS

Section 2 now reads: "By collecting, and making available, data as to successful plans in educating employes;" amended to read: "By collecting, and making available, data as to successful and unsuccessful plans of developing the efficiency of the individual employe."

### ARTICLE III

#### MEMBERSHIP

Section 3 now reads: "Class B members shall be officers, managers or instructors of schools conducted by corporations who are Class A members. They shall be entitled to hold office and attend all general meetings of the Association;" amended to read, "Class B members shall be any employe of a Class A member. They shall be entitled to hold office and to attend all general meetings of the Association."

## ARTICLE IV

### OFFICERS

Section 3 now reads: "The Executive Committee shall consist of a President, First and Second Vice-Presidents and nine members, six of whom shall be elected from Class A members and three from Class B. Two Class A members and one Class B member shall be chosen at each Annual Meeting except the first, and shall hold office for three years or until their successors are elected. At the first meeting of the Association nine members shall be elected, six from Class A and three from Class B. Two Class A and one Class B to serve for one year; two Class A and one Class B to serve for two years; two Class A and one Class B to serve for three years;" amended to read: "The Executive Committee shall consist of a President, First and Second Vice-Presidents and nine members, at least six of whom shall be elected from Class A, and the balance may be from Class B. Three members shall be chosen at each Annual Meeting and shall hold office for three years or until their successors are elected."

## ARTICLE V

### MEETINGS

Section 1 now reads: "The Annual Meeting shall be held during the month of June of each year, and in such places and on such dates as the Executive Committee may determine;" amended to read: "The Annual Meeting shall be held in such places and on such dates as the Executive Committee may determine."

## ARTICLE VI

### QUORUM

Now reads: "Fifteen Class A members shall constitute a quorum for the transaction of business;" amended to read: "Twenty-five Class A members shall constitute a quorum for the transaction of business."

## ARTICLE VII

### DUES

Section 1 now reads: "The annual dues of Class A members shall be \$50.00;" amended to read: "The annual dues of Class A members shall be \$100.00."

Section 3 now reads: "All dues shall be payable in advance and shall cover the calendar year. Any members in arrears for three months shall be dropped by the Executive Committee, unless in its judgment sufficient reasons exist for continuing members on the roll;" amended to read: "All dues shall be payable in advance and shall cover the calendar year. New Class A members joining between January 1st and April 1st, shall pay first year's dues of \$100.00; those joining between April 1st and July 1st, shall pay for nine months' dues, or \$75.00; those joining between July 1st and October 1st, shall pay six months' dues or \$50.00; those joining between October 1st and December 31st, shall pay three months' dues or \$25.00, but for subsequent years shall pay full dues of \$100.00. Any members in arrears for three months shall be dropped by the Executive Committee unless in its judgment sufficient reasons shall exist for continuing members on the roll."

The following article is added and becomes article X: "The Association shall publish a monthly magazine to be called 'The National Association of Corporation Schools Bulletin,' which shall be under the direction of the Secretary, subject to the approval of the Executive Committee as to the policy and scope thereof and the expenditures therefor. The annual subscription price of 'The National Association of Corporation Schools Bulletin' shall be \$2.00, and is included in the annual dues of the members." This article is added to enable our Association to get second class entry from the Post-Office Department for its monthly Bulletin.

The principal change suggested, it will be noted, is to increase Class A membership dues from \$50.00 per year to \$100.00. It has been found that the principal source of income of our Association—annual dues—does not provide sufficient revenue to enable the Association to carry on its activities to the best advantage of our members. There was considerable debate at the time the constitution was adopted as to whether Class A dues should be fixed at \$100.00 or \$50.00. The lower figure was finally accepted until such time as experience should demonstrate the needs of revenue to develop and prosecute the work of our Association. During the present year it was necessary to ask for contributions in order that advanced reports of the Committees might be printed and sent to all members in advance of the Annual Convention, thus enabling members to come to the Convention prepared to discuss the reports and offer helpful suggestions and criticisms.

As the work has progressed other activities have become necessary which demand additional revenue. It is felt that the fee of \$100 will cover the future requirements of our Association.

If the report of the Committee on Revision of the Constitution is accepted by the Executive Committee at its January meeting, the report will then be printed and mailed to all Class A members prior to the next Annual Convention and will come before the business session at that convention for adoption.

### **Membership Campaign**

The campaign inaugurated for new Class "A" members in November is still being vigorously carried on through the Executive Secretary's office. A list of new members will be found in this issue of the Bulletin. It is encouraging to the officers of the Association to have so many of our members taking an interest in this campaign. There are, however, still many sections of the country where as yet no progress has been made. Such cities as Detroit, Rochester and other manufacturing centers offer splendid opportunities for personal effort. It is the aim of our Association to increase our Class "A" membership to at least 200 by the close of 1916. The efforts of Mr. N. C. Kingsbury, First Vice-President of the American Telephone and Telegraph Company, and of Mr. Herbert J. Tily, our First Vice-President, have been especially fruitful. Mr. Kingsbury now has seven Class "A" memberships to his personal credit and Mr. Tily six memberships. President McLeod, with five Class "A" and one Class "C" members, stands next on the list. As the movement progresses and its significance is more fully understood, it is hoped that all of our members will enter into the spirit of the campaign that there may be equal activity in all sections where our Association now has representatives.

### **Training Raw Material**

In stating the problem of the United States Cast Iron Pipe and Foundry Company, Mr. Russell, Class "A" member representing this Company, undoubtedly opened up a new field of effort on the part of our Association. Mr. Russell, in his statement to the Executive Committee, defined the educational needs of his Company as "Developing the raw, untrained laborer through fundamental education as well as through special



courses." After considering this problem the Executive Committee concluded that several other Class "A" members are probably confronted with the same conditions. It was the judgment of President McLeod, which judgment was concurred in by the entire Committee, that this problem can best be handled through a sub-committee. The Executive Secretary has made a preliminary canvass for volunteers to serve on such a committee and President McLeod hopes to announce the committee at the January meeting of the Executive Committee. The Executive Secretary would be pleased to hear from all Class "A" members who are interested in this problem and would also be glad to receive volunteers to serve on the committee. There is considerable data with which the committee may begin its study of the problem. The International Harvester Company has printed an arithmetic designed to meet its requirements, and Mr. J. E. Banks, in charge of the educational work of the American Bridge Company, has issued a book, "English for Adult Students of Foreign Birth."

#### **Sub-Committees**

Mr. J. W. Dietz, Chairman of the Committee on Special Training Schools, in a letter to the Executive Secretary's office, says: "You will be interested to know, I am sure, that the material is coming in quite satisfactorily and I believe we will have the basis for a helpful report."

Vice-President Tipper, Chairman of the Codification Committee, reports that most of our Class "A" members have returned the questionnaires which were sent to them, and while his Committee has undertaken a job of tremendous magnitude, they expect to submit a compilation that will be both helpful and satisfactory.

#### **Proceedings**

Requests from libraries and universities for bound volumes of the Proceedings of the Annual Conventions of the Association continue to be received at the Executive Secretary's office. Such requests increase in number as the work of our Association develops. As one library put it, "We desire the complete set of the Proceedings of your Annual Conventions and of the monthly Bulletins which you issue as we look upon these documents as the only authentic record of the development of industrial education in the United States from the viewpoint of industry."

### **Bulletins**

Beginning with the September, 1914, issue, one hundred copies of the Association's monthly BULLETIN were reserved for binding purposes. As there were only four numbers in 1914, they were not bound into volumes but will be included with the 1915 volume and these bound volumes will be available some time the latter part of January and will probably sell around \$2.00 to \$2.50. There will be only one hundred copies, and as quite a demand is anticipated, requests will be filled in order of their receipt.

### **Fourth Annual Convention**

The Fourth Annual Convention of our Association, to be held in Pittsburgh, May 30th, 31st, June 1st and 2d, promises to be a memorable occasion. Inquiries are already being received and there is evidence of greater interest than during any previous period of our Association.

---

### **VOCATIONAL TRAINING**

*(St. Louis Star)*

Dr. Benjamin Ide Wheeler, president of the University of California, has declared against vocational training in the public schools and in favor of the "higher education" which has been the chief failure of our public school system. It is his idea that public education should take the form of the highest intellectual development, on the principle that such development should be equally within the reach of the rich and poor in a democratic country.

There is no occasion to dispute that proposition, but there is need to combat his other statement, that vocational training in the schools tends to perpetuate a working class and an aristocracy. If only the rich can get a high education and the poor must all be taught trades, true democracy is lost in a perpetuation of caste.

Even that proposition is not open to argument if it was a true statement of the effect of vocational training, but it is not. Notwithstanding the addition of mechanical and trades instruction to the common school and high school curriculum, the road to higher education at public expense in the State universities would still be as open as it is now. The poor boy would have just as good an opportunity for higher education as now, while he would

have a far better one for such education as would enable him to earn an honest and sure livelihood at some vocation.

Vocational training closes no doors of opportunity but it opens many that are now closed. Our present system fosters aristocracy, because it sends out boys and girls unprepared for the struggle with the world. Pray which boy is the most likely to break down the barriers between the rich and the poor, he who enters upon life with only the things now taught in the grammar grades, or he who has these plus skill in some vocation?

Ninety per cent. of children who enter the primary grade leave school before they reach the High School. Would it be undemocratic to teach them something by which they might earn a sure livelihood, by knowing which they are not by any means barred from advancing, but are rather aided to advance? While thus aiding the 90 per cent., there would be no restriction placed upon the advance of the other 10 per cent., just as they now advance.

Nor is vocational training a new thought, an innovation. We are doing it now, though poorly. We are now giving instruction in stenography, typewriting and bookkeeping, equipping boys and girls for work that is already oversupplied with workers and is of the poorest paid kind. Would it be less democratic to train them in something having better promise of independence and a competency?

It is our present system which fosters an aristocracy by keeping the masses of the people at an average low stage of earning capacity. Vocational training would raise that average. That in turn would increase the amount available for schools and open still wider the door of opportunity for higher education for the children of the poor.

---

### **VOCATIONAL TRAINING IN PUBLIC SCHOOLS**

*(Pittsburgh Post)*

The strong trend of modern education toward what is broadly known as the "practical" is not confined to the managers of the public schools. For example, President Lowell of Harvard recently stated that he thought he could approve a two-years' college course. Reducing by one-half the time traditionally allowed for college study would not be the only concession to the "practical" spirit such a change would involve. There would simultaneously be such an arrangement of courses that the student could eliminate almost entirely the old classical and academic

studies, and though he would know less about Greek tragedy on his graduation he would know more about the things that men are called to deal with today in the direction of great mercantile and industrial enterprises. Technical education, in short, has the old-fashioned slavery to the classics on the run, and Harvard feels the pressure as well as the "people's colleges."

The movement for practical training is, however, naturally more vigorous in the public school system. It has radically altered the character of instruction in public schools in every part of the country. Many cities have testified their satisfaction with the new courses in manual training, but perhaps the most pronounced endorsement of it recorded in recent years is that just given by Mr. Ettinger, superintendent of the schools in New York.

The New York superintendent submits a report showing that in six elementary schools 4,000 boys and girls have received for six months practical instruction in such everyday employment as carpentry, painting, plumbing, dressmaking, millinery and like industrial work. The result is described as convincing. Children have been helped to find their natural bent. Those who have to leave school at the eighth grade are turned out better fitted to decide what trade to follow and to make progress in that trade. Those who can go on to the industrial schools are able to advance more rapidly there. And none have lost and real "culture" in this finding-out process. On the contrary, in being better fitted for useful careers and for the wages commanded by skilled labor they are given power to secure as much culture as their minds crave or can stand. It is safe to say that no city which has established vocational training in the public schools will ever return to the old "three r's" system.

---

### **TRAINING GIRLS FOR BUSINESS AT SCHOOL**

Business training for girls is the aim of the Francis T. Nicholls Industrial School for girls at New Orleans and classes held at the institution set aside for commercial instruction are doing much toward preparing young girls for life in the busy commercial centers. Miss Rita Johnson, principal of the school, is assisted by a faculty which specializes on the work of turning out finished girl workers.

Handicaps interfere somewhat with the working out of the big problems that every day confront members of the Nicholls School, but just as fast as difficulties appear efforts are made to

overcome them. The Nicholls School is the only one of its kind in New Orleans, and its pupils are representative of classes from practically every corner of the city.

Dressmaking, millinery, domestic science, commercial design, salesmanship are the subjects taught at this school. Last session attendance in each of the courses was as follows: Dressmaking, 277; millinery, 78; domestic science, 36; commercial design, 7; salesmanship, 25. The total enrollment for the year was 423 students. In February and July a total of 118 students qualified for graduation and received diplomas.

There is a wide range in ages of students of the Nicholls Industrial School. Four were under fourteen years of age; sixty were between fourteen and fifteen; ninety-four came between fifteen and sixteen; 148 were included in the class between sixteen and seventeen and 117 were over eighteen.

Few changes have been made in the courses of study. Five distinct divisions have been established in the dressmaking department which resulted in more practical work and added a spirit of emulation and gave more zest and more meaning to all the work in this department.

---

### GOOD WILL

What is that which next makes most for success after organization, permeated with the spirit of co-operation?

It is conducting the affairs of the company along the lines of straightforward business principles, which will win for the company the good will of its patrons.

One of our basic rules of action is that we cannot buy the good will of a customer. He cannot sell good will. It will not stay bought.

If we do not deserve good will by reason of the quality of our goods, by the methods under which they are sold, by the service our organization renders, that good will, upon which the company's success depends, will slip through our fingers.

If we know and can prove that we are right, fair, equitable and sound in our principles, we will get the customer's good will ultimately and then it will belong to us. It will be ours by right of having won it fairly—by right of deserving it.

I would rather have this company right than to have it a greater financial success. I consider that the greatest success we can make is to have it said of us that *we are right*.

H. B. JOY, *President Packard Motor Car Co.*



## **FOREIGN BORN CHILDREN PREDOMINATE**

### **They Constitute 74 Per Cent. of the Attendance of Those Devoted to Elementary Studies in New York City's Evening Schools**

Seventy-four out of every one hundred pupils in New York city's evening elementary schools are foreign-born. More than half of the foreign-born come from Russia. About 82 per cent. are made up of people from three nations—Russia, Austria-Hungary and Italy. Of the 3,001 teachers in the eighty-nine schools, 1,057 were at business pursuits during the day, and 1,944 were employed in day high or elementary schools. In the last school year 107,845 children applied for admission, of whom 6,800 never actually entered a class room.

There is a rapid rise in attendance at the evening schools, from the opening session until the sixth week, after which the attendance falls. Thus, in the last year these schools began with a total attendance of 42,520, which grew to 53,916 in the fourth week, went up to 54,235 in the sixth week and thereafter declined as follows: Eighth week, 51,363; tenth week, 47,384; twelfth week, 45,144; sixteenth week, 42,282; eighteenth week, 40,775; twenty-second week, 33,525.

### **Something Lacking**

The regularity of attendance is smallest among females over twenty-one. There were 12,285 pupils who attended only the first four sessions of the first term, and 8,032 who attended only the first four sessions of the second term—a total of 20,317. There were 28,160 others who attended only nine of the ninety sessions. This makes 48,477 who had dropped out before the fifteenth session, or nearly one-half of the total number who applied for admission, "in the effort for whose improvement the evening schools may be said to have failed," says District Supt. Henry E. Jenkins.

"For so great a number," Mr. Jenkins adds, "a statement of general shiftlessness on the part of the pupils hardly suffices. It would seem definitely to indicate a lack of something on the part of the schools."

### **Women Indorse Child Labor Bill**

The New York State Federation of Women's Clubs has indorsed the Keating-Owen Federal Child Labor bill and pledged itself to active support of the National Child Labor Committee



in its campaign for the passage of the bill by Congress this year. The bill prohibits interstate commerce in goods in the manufacture of which children under 14 have been employed in mills, factories, canneries or workshops, children under 16 in mines or in which children under 16 have worked more than eight hours a day or night.

---

### **AGRICULTURE NOW IMPORTANT STUDY**

"Agricultural Education and Its Development in the United States" was the subject of an address given before the Wilmington Delaware High School by Professor F. B. Hills, of the agricultural department of Delaware College.

Dr. Hills spoke of the rapid development that the study of agriculture has made within the last fifteen or twenty years. He explained the various branches that make up the agricultural course at the college, mentioning briefly horticulture, animal husbandry, plant production, farm extension work and soil fertility. "The agricultural course is as yet in an experimental stage," said Dr. Hills, "but so rapidly is it becoming organized and advanced that the course of a few years ought to bring about a wonderful change in rural districts.

"The rural problems, and there are many," said Dr. Hills, "are now attracting general attention and I might say here that one of the most important aims and objects of the agricultural course is for the betterment of social and industrial life of rural communities. We want to make our rural life more satisfactory, more productive and more contented so that our young men and women will not feel the call of the city so strongly but will be content to remain on their farms and devote their time and attention to producing the best."

Concerning the college extension work, which is just beginning to be a part of the agricultural course, Dr. Hills said it is meeting with great opposition among the farmers representing the older generation. It has been found easier to make the work of the branch felt more keenly by teaching the younger generation.

"However, in spite of its being received unfavorably, as it was in some parts, the agricultural course is now recognized as being a vital part of the educational system of our country," said the speaker, "whereas it now has a strong foothold in practically all the colleges, in a great many of the High Schools, and in a number of secondary schools as well.

## **INSTRUCTION IN THE TRANSPORTATION DEPARTMENT OF THE SOUTHERN PACIFIC**

### **How a Great Railroad System Is Developing Team Work and Efficiency Through the Corporation School**

BY NORMAN COLLYER, Chief Clerk to President.

To the corporation which contemplates inaugurating educational work among its older employes, two difficulties present themselves: first, how to awaken the interest of the men in correcting false convictions and wrong habits of the past; and second, how to meet the objections of organized labor. This is an account of the means by which these difficulties were overcome by the Southern Pacific Company in its Transportation Department.

The operation of trains requires perfect teamwork and mutual understanding between the various train and engine crews. No baseball or football team ever watched for signals with greater vigilance than they watch for switch light, lantern and semaphore or obeyed with greater alacrity and precision; and no game was ever played for higher stakes than the safety of passengers and employes. In the earlier days of railroading, the rules governing train operation were a matter for the determination of individual roads, and differed widely in various parts of the country, so that a brakeman or engineer changing from one road to another—and such changes were frequent then—had to *unlearn* a considerable portion of what he already knew. This led to the adoption of the standard code of transportation rules of the American Railway Association, now virtually in effect on every railroad in the United States, thus giving to every road the benefit of the accumulated experience and best practice of all.

#### **Correcting a Hazardous Condition**

Although the rules became similar in form, there were variations in their interpretation, not only on different railroads, but on different divisions of the same railroad, giving rise to a condition which might lead to a hazard of accident. In recognition of this danger, the Southern Pacific in 1902 undertook the instruction and training of all of its employees in any way concerned with the movement of trains, in the uniform interpretation and application of its standard code of transportation rules.

To this end Mr. Wm. Nichols, a train dispatcher, was

assigned to duty of traveling over the system for the purpose of lecturing to those employes subject to the rules, their attendance without extra pay being made compulsory. An old passenger coach, with the seats removed from one end and a raised platform installed, constituted the first instruction car. Later Harry W. Brydges, a conductor, and James S. Moore, an engineer, were added to his staff, comprising with a stenographer-secretary the present Board of Examiners. The Board is directly subordinate to the General Manager and interprets firsthand his rulings upon obscure points, thus obtaining that uniformity which was one purpose of the plan. The instruction car now in use contains an office and living quarters for the Board, and a lecture room with seats for 28 employees, together with a full complement of charts, models, maps, signals, diagrams, stereopticon, screens and similar apparatus for making the instruction as graphic as possible. The first two trips of the car were for instruction purposes only; since then the Board has been examining as well.

#### **How Examinations Are Conducted**

The Pacific System of the Southern Pacific Company is some 7,000 miles in length, extending from San Francisco to Portland, Oregon, Ogden, Utah and El Paso, Texas. Employees subject to instruction and examination are about 9,000 in number, and include engineers, firemen, conductors, brakemen, dispatchers, operators, yardmen, hostlers, and in fact every one who has anything to do with train service. For the Board of Examiners to complete the circuit and return to a given point takes two years. Upon arrival on a division, the Board is provided by the Superintendent with a list of employes subject to examination. The car is parked on some convenient track, and its sessions are announced. On account of the length of the examination (six to nine hours), it is divided for convenience into a "morning" and an "afternoon" session, and all employes are required to attend each session on their own time at least once. Later to meet the leisure hours of employes, the sessions may be inverted or given in the evening. All classes of employes except operators are admitted, their names being charted by the secretary for the examiner's use. They are then orally quizzed by the examiner in charge, who directs his questions by name according to occupation. By admitting them just as they appear at the car, firemen and brakemen listen to the answers of engineers and conductors and are being educated for promotion to those positions long in advance of the time they will be needed. The

operators' examination is in many respects different from that of other employes, which is one reason for taking them separately; the other reason is that absence of operators from their stations along the line would cripple the telegraph service, hence Mahomet goes to the mountain, the instruction car is run special over the division, and the Board gives the operator at each station his medicine as he sits at his key.

### **Speaking the Language of the Men**

Representing the same rank of railroad service as the men, the members of the Board "speak their language." The two thousand questions asked are enlivened with homely metaphor, colloquial allusion, and railroad slang; the trains, stations and fixed signals referred to are local to the division. Indeed, the examination includes the "Special Rules" on each division timetable. Through long experience the examiners have acquired a disturbing proficiency in detecting the malingerer, the dullard, or the incompetent. If an employe fails to meet the required standards to the examiner's satisfaction, he is directly notified to return for re-examination. If he shows improvement he can have as many slips-tries-over as are reasonable, even if in the meantime he has to follow the car to some other point. If he proves hopeless there is only one thing to do—disqualify him from a grade of service in which he can place in jeopardy the lives of the public and his fellow workers. Fortunately, such cases are rare.

Every employe passing the examination is given a certificate good for two years, or until the next return of the car. By examining all alike, the older employes are brightened up on their knowledge of the rules; for if they do not at any other time, they will study them before taking the examination. Frequently the older men by virtue of their seniority bid in the easier branch runs where they have no other trains to meet and little use for the rules; yet they must not be permitted to become rusty on that account, for an emergency may arise at any time in which they may be called upon for main line service. It is thoroughly understood that "no certificate, no job;" and those who fail to appear and obtain a certificate are required to follow the car, except in event of sickness or leave of absence. To care for such cases, also to examine new employes hired and old ones promoted during the absence of the car, local examiners are appointed on each division, who must in turn take their examination at the hands of the Board. New employes, after a month's probationary service, are required to answer orally some 300

questions, their examination consuming three hours. Firemen promoted to engineers and brakemen promoted to conductors must answer from 1,200 to 1,500 questions in an examination lasting from seven to ten hours. In the item of train orders alone, 72 practical examples are discussed. These examinations are reported in shorthand and a transcript filed with the employe's personal record.

### **Home-made Appliances for Teaching**

The charts and apparatus used in the car are all home-made, and much of the equipment has been invented and constructed by the Board of Examiners. One very interesting model shows six miles of standard main line with automatic block signals in miniature which are electrically operated by small brass cars just as in actual practice. Here an employe is able to study the inter-relation between trains and signals because he can see all signals simultaneously, which he cannot do while riding on a train. Instruction in safety work is not neglected, as the examiner uses in his lecture about 150 colored slides showing hazardous situations in which employes may place themselves. At terminals where good audiences can be obtained, safety-first meetings are held.

While passing over each division the Board of Examiners notes irregularities and reports them to the Superintendent for correction. Special attention is given to the subject of train orders. The different forms of orders are prescribed by the rules, and must not be varied from except when necessary to meet an unusual situation. Operators must copy their orders in a plain, legible hand, minus the flourishes and curlicues affected by telegraphers generally. There are the classic examples of the wasp-like "8" which obscured a figure "1" on the line below, and the operator who wrote 1,250 PM by making the cipher a button on the shoulder of the letter "P," so that it was mistaken for 125 PM. The Board calls for and checks all train orders for a period of two or three weeks on each division, also dispatchers' train order books for violations in form, train sheets, and train registers at all registering stations. On one occasion all train orders issued during a five days' period on each of the ten divisions of the Pacific System were carefully checked. Out of about twelve thousand orders not more than six were out of form or in any way objectionable. Railroad men will agree that this is a remarkable record.



### **Instructions Backed by Discipline**

The instruction work of the Board is backed up by a splendid system of discipline, resolutely applied, and by a system of efficiency tests, on the observance of the rules, made by division and general officers without fore-knowledge on the part of employes. During the fiscal year ended June 30, 1915, 35,378 such tests were made on the Pacific System, of which 99.93 per cent registered perfect. It is these tests of which Southern Pacific Conductor William Schwab, winner of the Harriman Memorial Bronze Safety Medal in 1913, said:

"The efficiency tests inaugurated by our Company have come to be a great factor in the prevention of accidents, and our men invite them at any hour of the day or night."

As for interference by organized labor, there has been none of any moment. The railroad brotherhoods are the strongest unions in the world, and among the most intelligent. They feel that an adequate plan of instruction is beneficial to them—that a correct understanding of the rules prevents them from getting into trouble. Many employes, after having passed the examination and received their certificates, return again and again as visitors. Now and then a man is found who does not take kindly to the examination, but he is promptly frowned down, for engineers have a profound disinclination to being "fried on the boiler head" because of the untrustworthiness of a fellow-employee. In short, the merit of the plan is attested by the results obtained; for during a period of over seven years the Southern Pacific has lost the life of but a single passenger in a train accident—that accident having been caused by a broken wheel on a foreign car, in no way attributable to a violation or misunderstanding of the rules.

---

### **APPRENTICE INSTRUCTION ON THE SOUTHERN PACIFIC**

BY THOMAS G. GRAY, Apprentice Instructor

Recognizing in education the only lasting foundation upon which to build up a greater efficiency in the work of maintaining its equipment, the Southern Pacific Company, in common with other progressive railroads of the country, has extended its educational work to include all its shop apprentices.

The first Apprentice School on the Southern Pacific was started in the fall of 1911 at the West Oakland Shops. A year later the management decided to extend educational opportunities



to the apprentices at all of the Division and General Shops on the system. Classes of apprentices were organized at the three largest shops, viz., Sacramento, Cal., Los Angeles, Cal., and Sparks, Nevada, on January 1, 1913. Since that time schools have been started at San Francisco, Cal., Dunsmuir, Cal., Brooklyn, Oregon and Ogden, Utah, making a total of eight apprentice schools now in operation on the system with an enrollment of 450 apprentices.

### **Instructors Taken from the Service**

The work of organizing and conducting these schools was, with but one exception, placed in the hands of men taken from the service, either draughtsmen or mechanics of unusual training. Some of these men are college graduates and all of them are experienced in shop work.

In entering upon such a new field of work as the organizing of Apprentice Schools, these men were at once impressed with the need for some available source of information from which to draw for guidance and help. Such a source is now being supplied through the admirable work of The National Association of Corporation Schools. Valuable help was obtained from articles published in the various railroad journals during the past few years and the fruit of much experience was cordially and generously given by leaders in educational work on the roads which have pioneered in this movement.

Upon the establishment of the earlier schools on the Southern Pacific each instructor worked out courses of instruction according to his own ideas, learning by experience as he progressed.

In January, 1914, a meeting of Southern Pacific Apprentice Instructors was held at Reno, Nevada, as a part of a Safety Conference, under the auspices of the University of Nevada. At this conference two vital needs for the development of the work was set forth in a recommendation to the management—first, that the work of training apprentices be organized under a central head and second, that standard courses of instruction be compiled.

### **How the School was Instituted**

Early in July, 1914, the work of compiling courses of instruction for the various trades was started and two months later a meeting of the Instructors was held at Sacramento to go over the work outlined and to adopt standard courses from the combined ideas of all. Rules governing the employment and

training of Apprentices, including schedules of shop experience, were also adopted at this meeting. These rules received the approval of the management and were put into effect February 1, 1915. The Standard Instruction Courses were approved by the management and were put into general use on September 1, 1915.

In compiling the Standard Instruction Courses recently put into general use in all Southern Pacific Schools, a general plan was followed, which, it is felt, answers in a practical and thorough way the needs of the shop apprentice as he progresses in his training.

### **The Plan Outlined**

The following outline of this general plan will be of interest, and it is hoped that it may prove helpful to those who are undertaking the compiling of courses.

*First:* A General Problem Course to be completed by every apprentice entering the schools.

This course includes instruction in all the principles of arithmetic from simple addition through ratio and proportion, the more common applications of mensuration and simple problems involving applications of the elementary principles of mechanics. In general the type of problem included in this course is the general railroad problem and not that pertaining to the work of a specific trade. This latter type of problem is included in the specific Trade Course which will be explained later.

The need for a General Problem Course covering a complete review of arithmetic, as a foundation for apprentice Instruction, will be readily conceded by all who have had sufficient experience to realize the general deficiency of grammar school graduates in this most important subject.

*Second:* A General Introductory Course in geometrical and mechanical drawing to be completed by every apprentice and to be carried on simultaneously with the general problem course, that is, an apprentice to work for one hour of his two hour period on the Problem Course, and one hour on the introductory course in Drawing.

It will be noted that the word introductory is underlined. This course is simply an introductory course and nothing more. Its purpose is not to teach geometrical and mechanical drawing, but simply to set forth in a clear and thorough way, those principles of drawing which must be applied later in the making of sketches. A mechanic to make a clear, understandable sketch,

must know the principles of drawing; he must know how to place the views, and it is the purpose of this course to explain and apply such fundamental principles of drawing as are used in the making of a good, clear sketch. The geometrical problems included in this course are those most likely to be of service to a mechanic in laying out work.

*Third: Trade Courses*—Upon the completion of the general Problem Course, and the General Introductory Course in geometrical and mechanical drawing each apprentice takes up the study of his particular trade course.

These trade courses supplement the instruction given in the two general courses above named, by including:

First: A set of problems bearing particularly on the work of the trade.

Second: A thorough exercise in the reading of working drawings.

The assignments for this work pertain to blue prints of standard Southern Pacific drawings, each school being provided with a set of such prints.

Third: A thorough exercise in free-hand sketching from models taken from each trade.

These models are numbered and graded so as to make the sketches increasingly difficult.

For boilermakers and tinsmiths, in addition to the exercises in reading working drawings and free-hand sketching, there is provided a thorough course in laying out patterns suited to the needs of each trade. These patterns are laid out on large sized wrapping paper and then cut out and turned to the desired shape.

### **Individual Progress Charts**

The shop instruction of apprentices on the Southern Pacific is receiving the close attention merited by this most important branch of the training of future mechanics. In the larger shops, where the number of apprentices warrants, shop instructors are employed who give their entire time to this work. The schedules of shop training for the several trades are followed as closely as possible, and in order to insure to each apprentice a well rounded training, an individual progress chart is kept showing graphically the amount of time spent on each part of the work outlined in the schedule. Entries are made on these charts twice a week by the School Instructor when the apprentices are attending school. Shop Foremen and shop instructors are kept in-

formed by the school instructor when apprentices have completed their prescribed time on the different classes of work. A seniority chart is posted in the school room and apprentices are advanced strictly according to seniority.

All records and progress charts are kept open to the apprentices and the instructors consult freely with them concerning their progress and make an effort so far as practical to let each one specialize along the particular line for which he seems most fitted or in which he may show a continued interest.

The system outlined above is having the effect of bringing the shop and the school in close touch. In making the entries on an apprentice's progress chart, the school instructor must of necessity ask him questions about his work. The answers given not only serve as a basis for the record kept, but very often lead to little conversations which help the instructor to learn where the weak points in the shop training are. He is then in a position to take the necessary steps toward investigating and remedying defects, and so the system improves.

### **Gaining Confidence of Students**

Experience has proved most forcibly that where the attitude of the instructor is one of genuinely friendly interest, the boys will gradually place more and more confidence in him and will finally look upon him as their champion; this places the instructor in a position of peculiar helpfulness both to his company and to the apprentices. By remedying defects in the shop training of the boys, he demonstrates to them his interest in their welfare, and by standing openly and unswervingly for the exercise of conscience and honesty in the performance of work, he helps toward the building up of an efficient and reliable working force.

Owing to the short time which the new apprentice system has been in operation on the Southern Pacific the results attained so far as they can be expressed in figures would not particularly impress the casual reader. But to those who come in daily contact with the apprentices, the results of less than three years' work are clearly indicative of the fact that apprentice instruction, according to modern method, is to be regarded as an investment and not as an expense.

### **What the Work Accomplishes**

Some of the observations which are commonly heard about the shop and which would tend to establish the truth of the above statement are:

1—A better class of boys apply for apprenticeships than formerly.

2—The boys show more interest in their work and are more attentive to their duties.

3—The boys display more thought and judgment and are not so dependent as they formerly were.

4—The so-called "Arts and Mysteries" of the trades are vanishing and boys now learn early in their apprenticeships, to perform work which, in former times, was jealously guarded by the "old time" mechanic.

5—Boys are being encouraged to give their suggestions both in the interest of safety and efficiency. As they see their suggestions acted upon, and as they receive acknowledgment for them, they come to feel a personal interest in the affairs of their shop. No statement can be given either in figures or words which can show the direct or indirect benefit which comes to any company through its educational work. To the extent that such educational work is conducted by men who command the respect and confidence of the young employes, will the benefits of educational work exceed those of mere instruction. For this reason, the apprentice instructor both in the school and in the shop should be a man of large ideas as to the possibilities of his work. He should not regard his work as just a "job," but rather should he be daily enthused at the thought of the possibilities for service which lie within his grasp.

The excellent article by Mr. Geo. M. Basford on "the Training of Young Men with Reference to Promotion" which appeared in the *Railway Age Gazette* of July 23, 1915, has borne fruit in the Southern Pacific apprentice schools through the introduction of a system by which promising young men in the service are periodically "sized-up" on a blank enumerating desirable characteristics as outlined in Mr. Basford's article. This system has already been used to good advantage in choosing young men for advancement.

### **What the Future Holds**

While the record of the modern apprenticeship system on the Southern Pacific has been one of rapid development and gratifying results, the future must be one, not only of greater perfection along present lines of activity, but of advancement along other lines which come legitimately within its sphere.

Probably the most pressing present need is for a more com-



plete organization of the apprentice system. To completely standardize the present instruction work at all points on the system as well as to inaugurate and direct work along more advanced lines requires a central head. An officer in charge of the educational work would supply to the instructors a uniform backing and support. This would, in large measure, make the success of their work independent of the co-operation or lack of co-operation of their local shop superiors.

A very much needed branch of the work of instructing apprentices is that which would open up to them the possibilities for greater efficiency in shop operations. This subject, taken up and followed in a progressive and systematic way, seems thus far to have received but little attention throughout the country. The experience of all who have undertaken the work of demonstrating the possibilities for increased output from shop tools and from shop methods generally has shown the need for a campaign of education calculated to remove blind prejudice and to instill an appreciation of scientific methods for carrying on shop work. This subject belongs to the apprentice school primarily, for our best work along this line can be done by creating in the minds of the rising generation of mechanics, a correct view of the purpose and merits of the modern efficiency movement in industrial life.

#### **Selecting Young Men to Develop**

Within our apprentice schools are many young men of unusual intelligence and ability. The near future will doubtless see the establishment of special apprenticeships for these young men, by means of which they may be given the opportunity for a more complete training within the Mechanical Department. From such material we shall be able to draw our future foremen. This subject must receive careful and continued attention if we are to build up an organization of the highest order.

Undoubtedly a most valuable work can be accomplished through the apprentice schools in the gradual building up of a better and more cordial relation between employer and employee. The apprentice instructor stands in a position of exceptional advantage in this regard. In a very real way he acts as the interpreter of his company's policy toward its employees. If humanity and squareness are the chief characteristics of his attitude toward them he can do much toward developing, as the years go by, that feeling of unity and co-operation which is always the basis of the most successful organization.

---

"Some of us are more interested in the other fellow's progress than in our own."



## **THE McCOMB APPRENTICESHIP PLAN, ILLINOIS CENTRAL RAILROAD**

By H. N. SENEY in *Railway Review*

To meet the serious objections and shortcomings of the various apprenticeship plans in common use, the Illinois Central R. R. has evolved a system of handling apprentices at its shops in the city of McComb, Miss., which is worthy of consideration. The system is the result of much study, three years of continued effort having been necessary to bring the plan to its present development. The solution to the problem has developed what the road terms the "co-operative apprentice." By the workings of the plan worthy high school boys over 16 years of age, as vacancies occur, are given employment at the company's shops as co-operative apprentices; "co-operation" meaning the working together of the railroad and the public schools in an effort to teach the boys a trade while at the same time they are being educated. There are now twenty-eight co-operative apprentices working in the shops. These boys spend their vacations in the shops and during the school year spend half of their time in the shops and the remainder in the high school. Ninth and tenth grade boys are in school while eleventh and twelfth are in the shops. They alternate weekly and the number in each weekly group is kept as nearly balanced as possible, thus assuring a constant force in the shops.

In the shops these boys are given practical instruction by their foreman and fellow workmen. A fixed schedule is used which governs the boys' transfer through the shops and sets the maximum time which a boy is allowed to remain on any one branch of work in his trade, thus assuring an all around experience. While in the shops these boys are required to attend the shop apprentice school every other day for a period of one hour. They are given instruction in reading working drawings, shop sketching, and mechanical drawing. Some time also is devoted to the consideration of the properties of steam, combustion of coal, and kindred subjects. Every possible effort is made to correlate technical instruction with actual shop practice. Co-operative apprentices are required to serve a five years' term. Four years while in school and one full year after graduating.

### **Boys Graduate With Their Classes**

Special arrangements have been made by the public school officials which enable the apprentice school boys to graduate with

their classes. Eighteen units are the normal requirement for graduation. Four units are allowed for the work in the shops and two units for apprentice school work. The remaining twelve units are earned in high school by taking three subjects each year consisting of English, mathematics and the sciences. The system, as now practiced, meets the approval of all directly concerned. Shop foremen find that by alternating weekly, shop work is not interfered with and that each period in the shop is long enough to enable the boy to keep his efficiency up to that of the regular apprentice. The high school teachers are able to take care of the weekly alternation without confusion and report that the grades made by the co-operative boys are equally as good as those of the regular school boy.

The benefits of the plan are found to be many. The superiority of the boys as apprentice material is beyond question. They have a good educational foundation on which the shops can base technical instruction. It develops, too, that this class of boys has a better education at the beginning of their apprenticeship than the average shop school educated boy has at the end of his time. The sponsors of the plan and those who have observed its workings feel that its success and practicability are already sufficient to warrant its general introduction, not only at other points on the Illinois Central, but on other roads as well.

---

### **CHOOSING THE CHILD'S WORK**

*Detroit Tribune*

Nothing better has been done by the National Education association in the sessions in St. Paul than its inauguration of a definite program for vocational guidance and education in the public schools. And the most significant feature of its program is the stress laid on guidance rather than training.

It is going to be a difficult thing to give the youngster who leaves school at 14 years of age enough technical training to enable him to enter the skilled trades. Many advocates of vocational training have believed that some sort of training could be given so the early entrant into the world's work would not further swell the ranks of common labor. The child who begins his life work early walks blindly into alleys that lead nowhere. The occupations open to such children are barren of opportunity.

Of a certain number of children who left school before 16 years of age, according to a recent report of the Federal Bureau of Labor, 90 per cent entered into industries in which the

wages of adults could not exceed \$10 per week. To say that this was pure accident is side-stepping the issue.

It would be no doubt possible to take the tender child and make him skilled in the mechanical arts before he reaches the age of 14. But it would be at a sacrifice of the finer, higher training to which every child is entitled. He would not have the complete education. And it is to this child, likely to leave school before he becomes eligible to entry into the higher technical schools, that attention must be given.

From Macaulay to Munsterberg, philosophers, thinkers, educators have recognized that we haven't treated the child right. Lately there has been a strong demand from the employing interests for more vocational work in the schools. It is well the teachers have answered that call and taken the matter in hand. For it is only the trained teacher who can take the pupil and fit him for the work to which he is best adapted.

In Germany advances have been made beyond the point of studying the child for his peculiar fitness. They are studying the industries as well. By co-operation between the common schools teaching vocational work on the one hand and the industries on the other, comes the continuation schools. In these schools it is determined how many youths are likely to make good machinists and how many, perhaps, good printers. But if it is known that either of these particular trades are crowded, some other occupation closely akin is found where more men are needed. German economists have taken the valuable labor statistics concerning the labor market, conditions, hours of employment, availability of positions, wages and other data and placed it in the hands of the vocational teachers, the pupil and the parents.

---

### **FOR BETTER TEACHERS**

An energetically contested debate as to whether the requirements for teachers in the county schools of Maryland should be raised or not formed the most interesting part of the annual meeting of the County Superintendents of the State Department of Education.

Although Dr. Samuel Garner, superintendent of the Anne Arundel schools, opposed the plan to raise the standard of requirements, all save three of the counties voted that greater "professional training" should be demanded of new teachers. The committee on legislation was instructed to prepare the views of the majority of the county superintendents and to submit them at a future meeting for action.

## THE COLLEGE OF STANDARD OIL

### **Description of a Training Department Where Young Men Are Taught to Introduce the Sale of Oil in Foreign Lands**

In the big building at 26 Broadway, New York, is to be found a school room with globes and blackboards and rows of regular school-boy desks and a bigger desk for the teacher.

This is the College of Standard Oil and here is laid the foundation for the struggle for the oil trade of the whole civilized world.

The following story of how Standard Oil fits its young salesmen for their duties is taken from an account which appeared recently in *The World Magazine*:

It is a story of efficiency. These young men are learning the game; learning to carry what they know about Standard Oil to the jungle and the desert, to the core of old world civilization and to the outer wilder boundaries of the inhabited globe. It is in essence a part of the secret of why Standard Oil dividends are big and Standard Oil stock is seldom sold, and, hence, can as seldom be bought.

Three years ago the idea for the school in oil struck the well-oiled brain of one of Mr. Rockefeller's keenest lieutenants. R. P. Tinsley, treasurer of the Standard Oil Company, issued a circular headed "Positions for Men in the Far East with the Standard Oil Company of New York," and here follows the introductory paragraph:

"The Standard Oil Company of New York is at all times glad to receive applications from young men wishing to enter its service abroad, principally in the Asiatic countries and Turkey. Those accepted are given training for four months in the New York office, and if they seem to have the qualifications for success are assigned to permanent positions. Their duties will range from office work and sales management up to the organization and development of agencies."

The rest was easy. The Standard Oil has plenty of timber for the professional staff of this new college of oil, and when the word went out there was no lack of applicants who expressed every willingness to be enrolled as students. Remember, please, that this entailed no hardships. If the aspirant to honors (and dollars) in oil got his chance the way opened wide to him.

While going to college he was to get \$17.50 a week—more pay than a West Point cadet—and at the moment he was assigned to a permanent job upon graduation in oil, he stepped into a place paying \$2,000 a year.

### **American Oil in Foreign Lands**

The Standard Oil Company of New York has the Far East pretty well mapped out for the getting and holding onto of business. It has to—the Dutch are pretty slick oilmen themselves, and the Germans were after a slice of the trade until the war kept them fairly busy elsewhere. This Far East business is divided up into sundry departments, so that nary a coolie-infested hamlet on some unpronounceable river, or some great city of Far Cathay clinging to the superstitions and customs of the past is left out—why, just to induce him to buy Standard Oil the anachronistic Chinaman is allowed to purchase a regular lamp (the celebrated Meifoo lamp of the Orient) for seven cents, the same being such a lamp as would cost him a couple of dollars anywhere else.

Constantinople is headquarters for the Turkish trade. The Bombay main office cares for all Western India; Calcutta does the same for Eastern India and the Burmah Peninsula; Batavia (here's where the Dutch are the white-haired boys) looks out for Java, Sumatra, Borneo, the Straits Settlements and other islands of the East Indies; Hong Kong is the main station for South China, Indo-China, Siam and the Philippines; the rest of China and Manchuria is managed from Shanghai; Japan and Corea have Yokohama headquarters, and there is a station for specialty goods (Standard Oil by-products, like candles and floor wax) at Johannesburg, South Africa.

### **Character of Applicants Trained**

Here, in one of these districts, is the ultimate destination of the students who survive the gruelling they get at the oil college and land a \$2,000 job. Some go to the main stations; others to the sub stations, and some far out into virgin territory, there to toil for Standard Oil and bring back the bacon.

But before we go out there with the budding youth whose gospel is oil, let's see him at college. How does a youth get to be an oil student? Here's the Standard's very explicit answer to this question:

"Owing to the nature of duties in the tropics and in partly civilized countries, applications can be ordinarily considered only



from Americans between the ages of 21 and 28. The Standard Oil Company of New York cannot accept responsibility for men younger than 21, and men older than 28 are not usually satisfied when placed in a class of beginners. Applicants must be unmarried, although there are no objections to marriage after two or three years of service."

"No previous business experience is necessary. Knowledge of a foreign language is desirable but not essential. When assigned to positions, however, men are expected to learn to speak the native tongue. The opportunities for advancement are good for all college graduates, and especially so for graduates of mechanical, civil, mining and other engineering schools and schools of commerce and accounting."

The applicant has to answer twenty-eight questions, which range from his age to his health, and take in his various desires and qualifications. He must name every previous place of employment, give three first-class references, and certify upon honor to his answers.

### **Careful Method of Selecting**

Next he is interviewed by three or four of his prospective employers. They size him up and jot down what they think of him under headings on the application form dubbed "Personality," "Ability," "Experience," and "Rating." Now he gets a modest examination in arithmetic and submits to a physical examination of about the same degree of severity as if he were applying for a life insurance policy. Everything O. K. so far, he is notified that he has been accepted and is told the date when he is to present himself and go upon the payroll of the Standard Oil.

The newcomer will find that E. S. Moffett is his President of the Faculty. This school is Mr. Moffett's hobby. Some of those who will lecture the student and quiz him in the Standard Oil methods are Mr. Tinsley, of whose office the school is an adjunct; William E. Bemis, Vice-President, and Henry A. McGhee, the Standard Oil's authority on tin cans—some authority, too.

### **What Students Are Taught**

And it is a mighty comprehensive course of lessons that these gentlemen have laid out for him. First the student learns the organization of the Standard Oil and the fields in which it operates. He studies its products (not all of them oil, by a long

sight) and particularly the marketing and accounting problems of the same. He listens to little selling talks from men who could sell Standard Oil—oil to the gasman or gasoline to the manufacturer of electric automobiles. The student will be instructed in the general talk of the trade, how to answer objections and how to sell Standard Oil to a man who wants to buy something else. He listens to lectures on oil manufacture. Far Eastern conditions, can manufacture, exporting and ship loading, the intricacies of commerce with countries that laugh at American customs, the chartering of vessels, the salvaging of wrecked boats and even the precautions against fire in a tank ship are regular subjects of study and lecture.

Students must learn the geography of the Orient and be able to draw out from memory and familiarity with the map the various districts into which the Far East is laid out. They must be able to plan out an oil route from a main station with the central idea of selling all the oil possible. They have two lectures a day on these and other important subjects and the two sessions last six hours between them.

The class has oil problems to solve, too. For example, these young men, on the particular day when Mr. Moffett explained the workings of his college of oil, were getting up gauge tables for a tank, showing how much it contained for each depth. The work for the next day was to be the laying out of a wagon route in China along a river where several villages lay back considerably in the foothills.

Not all the lessons are given in the class room. The students are taken to see a ship loading for the East. They see the various cans being made in the factories. They witness the manufacture of cases and barrels. They visit the recoopering plant. They watch oil as it is refined. They have to go out and seek certain definite information. They write out reports on special subjects assigned to them. They have a course of lectures in business English and letter writing. They report on oil propositions and learn to make investigations with a view to establishing business in a new territory. They learn how to submit figures for any given condition. They acquire much about lubricating and road oils, about candles and stove and lamp goods, floor oils and oil-burning devices.

### **Process of Elimination**

But not all of them. As the weeks fly by the class grows smaller and smaller—the elimination process has been getting in

its deadly work. As the number grows beautifully less the graduation day draws near. On that date about 33 per cent. of the class survive. Only 20 per cent. of the last class get by Mr. Rockefeller's keen eyed assistants, but of the present class fully 60 per cent. are slated for jobs in the Orient. Of 200 who apply originally about 30 per cent. get a chance to start.

Those who survive all this go East now—\$2,000 men, every one, with all sorts of chances for getting a raise. In fact, nearly all of them are drawing down \$3,000 at least when the three years is up in the foreign field and they are entitled to from four to six monthes off with full pay, and steamship fares back to the United States. About this time the Standard Oil expects the young men to get married—if they so wish.

And by this time, too, they have achieved what the Standard Oil expects of every one of them—they have learned the language of the country well enough to talk oil in it. Those in South China, for instance, learn Cantonese; and in North China they learn Manchu. Just now the Standard Oil is getting out a pocket memorandum book with 500 Chinese words in it—enough to sell oil.

One of the interesting lectures the students listen to is one on humility. That's not the Standard Oil's definition, but it's what it amounts to. It means—don't try to criticise your superiors, and don't think you know it all. Likewise—"Keep mum."

Initiative is aimed at for every one. They still tell the story of one of the youths in the first class. During recess he drew a heraldic shield on the blackboard. Then he quartered the field and inscribed therein a pile of oil barrels, a tank wagon, a gushing oil well and a steel tanker. Over the shield as a crest went the Meifoo lamp (Meifoo is China-way of saying Standard Oil) and below the escutcheon the motto, "In John We Trust."

The artistic youth had just finished when teacher entered. "Who drew that?"

"I did," responded the luckless wight.

"Would you mind drawing me another on a sheet of paper?"

There was nothing else to do. When teacher got the copy he left the room and never again was the subject referred to. Class rumor hath it to-day that the work of amateur art in oils hangs somewhere in some holy of holies as a constant reminder of—well, never mind. And the designer thereof is still working for Standard Oil.

He's a \$5,000 man now.

## **SCHOOL EFFICIENCY PLAN URGED FOR SOUTH**

### **Whole South to be Reorganized by Counties and Put On a Better Educational Basis**

At a gathering of Southern industrial, educational leaders held at Nashville, Tennessee, P. P. Claxton, National Commissioner of Education, called to the nation to realize anew that the preparedness demanded by the future must begin in childhood. Mr. Claxton urged that every child in America has a right to 160 days of thorough training every year of the school age. To get a permanent corps of teachers the Commissioner further pleaded with the authorities to provide a teachers' home at every important rural school center.

The efficiency scheme outlined by the Commissioner includes a county library with the schools as distributing centers, a farm from five to fifty acres used for instruction purposes as well as a demonstration farm for the community, and ultimately an all-year session to bring full and equal opportunity of education to every boy and girl in America.

### **Co-operation is Sought**

Chairman W. H. Smith, president of the Southern Conference for Education and Industry, explained that the meeting was held upon the invitation of the conference to work out a plan for the co-operation of the National Bureau of Education, the Southern Conference, together with industrial, denominational, State and county agencies, in a campaign for the adequate education force in every county in the South. This is the first step toward the realization of the Commissioner's ideal.

From data collected by the National Bureau of Education, Mr. Smith stated that the Executive Office of the conference is making a list of the Southern counties that now employ a whole-time county superintendent with a minimum salary of \$25 for every teacher in the county up to sixty; a stenographer and clerk for the county superintendent, a supervising assistant, looking after the improvement of both the equipment and the teaching of the school. The plan is for all forces to join hands in local campaigns in the hope that every county in the South during 1916 can be added to the list.

### **Community Centers Planned**

The meeting considered plans for the union of forces in county campaigns to develop community centers each with a

school running not less than 160 days, with a corps of at least three teachers, along with a teachers' home, a social farm from five to fifty acres, an active Community League and a community savings and loan association.

For co-operation with the Southern Conference for Education and Industry, State and local agencies in the campaigns for the county force and community centers, the Commissioner has designated J. L. McBrien, chief of the Extension Division, to act as the representative of the National Bureau of Education. Mr. McBrien will meet with leaders in conferences.

---

### **SEES NEW ERA IN EDUCATIONAL SYSTEMS**

---

#### **Children Must Be Prepared for Fiercer Economic Struggle— Dr. Claxton Urges Vocational Training as Best Solution of Problem**

"The children of to-day will have to face a 'fiercer democracy' when they become men and women of to-morrow, and unless they are fitted by a comprehensive vocational training to successfully meet the great complexities of life, which are bound to face them when they leave the public schools, our educational system will have failed of its purpose." This prediction was made by Dr. Philander P. Claxton, United States Commissioner of Education, who spoke on "Tendencies to Adapt Education to the Needs of Life," at the concluding session of a teachers' institute, held in Washington recently.

#### **Three Great Factors in Education**

The three great factors to be considered in the formation of any worth-while educational system, he said, were: 1. Development of true manhood and true womanhood. 2. Preparation for good citizenship, with its attendant responsibilities and duties. 3. Education which will insure a livelihood.

"The public school student of to-day probably will live to see this nation with a population of 200,000,000 inhabitants. Some of them will live in cities of 10,000,000 inhabitants and others in cities of 1,000,000 inhabitants, and if these men and women of to-morrow are to make a success of life, they must be taught to earn a living, to become good citizens, and to appreciate the importance of sanitation and hygiene."



## **TAKING CENSUS OF BRONX, N. Y., INDUSTRIES**

### **Aim of Survey is to Obtain Full Data About Factories; Also to Help Boys Select a Vocation**

One of the most recently launched educational movements is an industrial and vocational survey of Bronx Borough by a joint committee representing the Board of Education of New York City, the Bronx Board of Trade, the New York University and the Young Men's Christian Association.

"This will be the first industrial survey ever undertaken in the greater city that will cover every line of business in the borough," says the Bronx Board of Trade. "The industrial experts of this board assert that when this work is finished the Bronx will know more about itself than will any other borough and will therefore be in a better position to take care of the community's industrial needs than similar sections of the metropolitan area, which are in competition for new industries. They also say the value of this survey to the development of the borough cannot be estimated; that the future statistics of the Bronx will alone tell the story. They believe that no other city with a similar population, 700,000, could secure a similar comprehensive survey of its community for less than \$100,000."

### **Object is to Aid Vocational Education**

The object of this systematic and comprehensive survey is two-fold: It is desired to obtain accurate data as to the industries of the borough and such information as will be of help in establishing vocational education.

In speaking of the value of this work M. E. Siegel, whom the Board of Education has assigned to this work, said: "The facts to be obtained are absolutely necessary for the industrial development of the Bronx and to encourage the larger development of industries and commerce already established in the borough. The data will be used to induce outside firms to locate their plants and establish their business in this borough. They will also be used to encourage the development of an efficient and co-operative working people.

"From an educational point of view, this survey will furnish information which is absolutely essential in establishing a system of vocational education in the Bronx.

"If nothing more were accomplished by this survey than fitting the rising generations into the proper vocations for life, it

will not have been in vain. In fact, this to me is one of the most important features of the entire work.

"The facts obtained by our investigations will furnish information as to the opportunities and the conditions of employment in the industrial and business world of the borough, and those interested in the careers of young people may more wisely and intelligently base their guidance of the life careers of the Bronx youth.

"There is hardly need to call attention to the fact that this is in every way a scientific age and that no action is taken by any large organization without obtaining all of the underlying facts.

"This survey is merely an attempt to base the future of this borough on the scientific investigation of the conditions prevailing at the present time, so that by this judicious use the borough may in the future avoid the mistakes of the past and undergo a greatly superior development."

---

### THE VOCATIONAL PROBLEM

*Indianapolis Star*

Some of the people who went into the work of vocational guidance—that is, studying the tendencies and possibilities of young people in order to direct them to the work in life for which they are best adapted—are finding that this is not the easy task they fancied it would be, and here and there one is frank enough to say so.

They learn, as a matter of fact, just what it was to be expected that they would learn, namely, that a very large number of boys and girls have no marked adaptability for one calling more than for another, and that even when they are older and their tastes and character more clearly defined they still fail to show predilection or fitness for any special work.

There is such a thing, of course, among human creatures as putting a round peg in a square hole and the reverse; such misfits in the work of the world are not uncommon and are always pathetic. They come about in various ways, but usually through the necessity on the part of the victims of entering any occupation they can find when they find it. Sometimes they realize their mistake in time to escape and find something more congenial; sometimes they remain in the irksome calling through life, always unhappy, always regretting the thing they should have done.

But the vast majority of men and women have no distinct gift for any given calling; they might fit in a particular niche that the vocational guides would select for them, but they would fit equally well in some other corner of the world's labor mart. Most persons have a feeling that they could have done better in some other field than the one into which fate called them, but this is merely a manifestation of the fact they have a diversity of talent. A man may be a good lawyer, but he might have made an equally good doctor or farmer or merchant. Another might make a successful writer or an equally successful cabinet maker.

Even in genius the bent in a given direction is not always so strong that it could not be diverted. James Whitcomb Riley, for example, turned out to be a poet, but when he was a youth he wanted to be a portrait painter and showed talent in that line; also he had a musical gift and he might undoubtedly have made an actor of quality. Persons less highly gifted may, nevertheless, safely choose among several occupations and have no regrets. It is fortunate that this is so, for circumstances not easily controlled oftener than not govern the "placing" of men in their life work, and varied adaptability is, therefore, most desirable. The vocational guide has a field of work, but it is limited.

---

### GENERAL EDUCATIONAL NOTES

With the Federal employment bureau extending its services to woman wage earners, it is interesting to note the number of vocations now followed by women, says the *Providence Journal*. Whereas 100 years ago there were but seven callings open to women, there now seems to be no field of industry barred against female invasion. Out of 313 occupations listed by the United States Census Bureau in its last report, there were but nine given over exclusively to men.

---

Superintendent of Schools William M. Davidson has announced that the Gary plan of public school operation will be introduced in Pittsburgh with the opening of the new William H. McKelvy School. Under the plan auditorium and playground work are to be combined with the schools, and the children of every school room will give place during some portion of the day to another set of children, thus making the teachers serve virtually double the number of pupils they do under ordinary conditions.

The second national annual Conference on Teacher Training for Rural Schools was addressed by Federal Commissioner of Education Claxton, who argued for a more efficient school system. His recommendations included: A school term of not less than 160 days; a sufficient number of teachers; consolidation of rural schools; teachers' home and a demonstration farm; an all-year session adapted to local conditions; a county library, with branch libraries at the centres of population, with the schools used as distributing centres; community organization, with the school as the intellectual, industrial, educational and social centre, and universal high school education for city and country. To put the recommendations into operation a committee of fourteen professors was appointed.

---

The high school building at Oklahoma City, Oklahoma, is the finest in the state and one of the finest in the west. The building is situated on one of the main streets of the city and has an enrollment of 1,600 students. It houses a complete high school, offering college, preparatory, manual training, science, commercial and general cultural course of study.

---

According to Commissioner of Education Finley, of New York, the "fundamental problem of better schools is better teaching—more broadly, richly educated, soundly trained teachers, with deep human sympathies, with professional pride and zeal, and with a willingness to teach for the love of teaching." And he seizes upon this truth as a reason why there is needed in the educational service a larger number of traveling experts, supervisors, to carry help and encouragement to the teaching body, says the *Mining Record*. It is just here that most teaching bodies are disaffected. They see large parts of the school appropriations going into elaborate buildings or into an increasing overhead expense and only small additions made from time to time to their own salaries—not enough ordinarily to measure the upward trend in their cost of living; a cost dictated by their necessity to dress in keeping with their vocation, to keep abreast of the tide of culture. True, the expenditures on teachers' salaries form by far the largest item in each school budget. But it is still not enough to satisfy. How this problem is to be met in view of the rising costs of other items of the school administration and the difficulty of extracting much more taxation is the interesting problem of the imminent future.

---

Manitowoc county, Wisconsin, which has been the pioneer in many educational innovations, recently instituted another when County Superintendent Meisnest and Fred Christiansen, accompanied by State Rural Inspector Larson, opened the first rural night school in the state at Francis Creek. The school will hold one session a week. Other schools will be instituted in other towns of the county. Instructors will give their services free.

Essentially a work-study-play school, the new school at Franklin, Sussex County, New Jersey, is not only an illustration of modern ideals in educational methods, building and equipment, but the only school in the East which fully applies the Gary principles. This is the second year that this small and somewhat isolated community has had the advantages of a school organized on the Gary plan, but it is the first year of the occupancy of its up-to-date school plant.

---

The workshop which the boys of School 14, of Troy, N Y., have fitted up in the basement of the school is very popular with the pupils, and attracts them after the regular school session is over. Carpentry, cabinet making and other crafts are being taken up, and occasionally mechanics from the neighborhood stop in and give the lads instruction. There are several sewing machines for the girls, and there are classes in dressmaking and millinery.

---

The manual training courses at the Schenectady, New York, High School are gaining in popularity each year and as new studies are added, good response is given by the students. The work is of the most interesting nature and will always be of benefit to the pupil, it is pointed out. This year the "home utility" course has been added to the many studies and many boys are taking it. Everything that is of a mechanical nature about the house will be taught including how to set locks, repair faucets, fix windows, repair electric bells and numerous other things.

---

Progress and efficiency is being attained with marked rapidity by the classes in the "vocational school" of Orange, New Jersey, according to the October report of W. Burton Patrick, superintendent of the Orange public schools, which he presented to the Board of Education of that city recently. Mr. Patrick reported that the first year boys in the wood-working department have completed various jobs in the city schools, which have saved the city the expense of awarding contracts for the work.

---

"Notwithstanding the evening for enrollment was Hallowe'en, twenty-seven classes were organized at the Manual Training High School, of Indianapolis, Indiana. Applicants were of both sexes, and of various ages and occupations, including thirty foreigners, none of whom could speak English. These persons represented the Netherlands and Serbia, Bohemia, Rumania and certain of the Slavic countries, says the *Indianapolis Star*. It is said that another instructor will be necessary to care for the adult classes in English. This may be regarded as the first step suggested by the Bureau of Immigration.

---

The enrollment of over 6,000 students in the evening high schools of St. Louis is cause for rejoicing among all observers of the character of work done in this latest development of the night school idea, the *St. Louis Globe-Democrat* says. The



matriculates are not amusement seekers or dilettanti, but are eager, earnest young men and women, bent on getting information and training that will advance them in the callings in which they are daily employed. But the fact that because of the congested conditions many can attend but one night in a week instead of three, and that thousands vainly clamor for enrollment is a matter for deep regret.

---

Fifteen thousand school children are now studying Spanish in the schools of the South as a direct result of recommendations made to educational authorities by the South American agency of the Southern Railway Company, according to the information in the annual report of the railroad by its president, Fairfax Harrison. The object of the agency, which has been in operation only a short while, is to stimulate the people of the South to take advantage of current opportunities for a mutually profitable trade with South America.

---

Columbia University should meet at once the growing demand for research laboratories to help solve the great industrial and engineering problems confronting manufacturers, according to Dean Frederick A. Goetze of the Graduate Engineering School, in his report to President Butler.

---

The manual training and domestic science departments of the Harris School, at San Antonio, Texas, are taking an active part in the school development. The work is also being made a part of the community life of the neighborhood. The girls in the domestic science department cook and serve breakfast several mornings in the week in order to learn not only how to cook the meal but to set the table and serve the meal also. In the manual training department, work has been started on furniture which the boys will use in their homes. Some of the things in process of construction are a Morris chair, desks, foot stools, bookcases, etc. The instructor, R. Harris, has started a class in drafting and designing so that the boys will be able to draw their own designs.

---

The Lafayette, Indiana, *Courier* says: The constantly growing interest in Lafayette's free night school in connection with the vocational school's work emphasizes the importance of this institution and the valuable service it is rendering the community. The night classes are larger than ever before and the plan is meeting with abundant success. The classes are open to all who wish to improve themselves, thus furnishing an opportunity that nobody interested in his future welfare can afford to overlook. The importance and value of this vocational school movement cannot be overestimated. The desire is to increase skill and efficiency among workers in various trades. Many young men who are unable to give education a thought during working hours have their nights free and welcome the chance to improve their mental condition and increase their earning capacity. Every cent that Lafayette spends on its vocational school is money well invested.

# Committees of The National Association of Corporation Schools 1915-16

---

## Trade Apprenticeship Schools

J. W. L. Hale, *Chairman*,  
The Pennsylvania Railroad Co.,  
Altoona, Pa.  
W. L. Chandler,  
Dodge Manufacturing Co.,  
Mishawaka, Indiana.  
J. M. Larkin,  
Fore River Shipbuilding Corporation,  
Quincy, Mass.  
F. W. Thomas,  
Atchison, Topeka & Santa Fe Railway,  
Topeka, Kansas.  
Paul V. Farnsworth,  
Cadillac Motor Car Co.,  
Detroit, Mich.  
Thomas G. Gray,  
Southern Pacific Co.,  
Sacramento, Cal.

## Advertising, Selling and Distribution Schools

Dr. Lee Galloway, *Chairman*,  
New York University,  
New York, N. Y.  
Professor M. T. Copeland,  
Harvard Business School,  
Cambridge, Mass.  
O. B. Carson,  
American Optical Co.,  
Southbridge, Mass.  
Frank L. Glynn,  
Boardman Apprentice Shops,  
New Haven, Conn.  
J. T. Spicer,  
Thomas Maddock's Sons Co.,  
Trenton, N. J.  
F. E. Van Buskirk,  
Remington Typewriter Co.,  
New York, N. Y.  
W. W. Kincaid,  
The Spirella Co.,  
Meadville, Pa.  
H. G. Carnell,  
The National Cash Register Co.,  
Dayton, Ohio.

## Accounting and Office Work Schools

George B. Everitt, *Chairman*,  
National Cloak and Suit Co.,  
New York, N. Y.  
Dr. Louis I. Dublin,  
Metropolitan Life Insurance Co.,  
New York, N. Y.  
R. H. Puffer,  
Larkin Co.,  
Buffalo, N. Y.  
H. A. Hopf, Phoenix Mutual Life Insurance Co.,  
Hartford, Conn.  
Frederick Uhl,  
American Telephone & Telegraph Co.,  
New York, N. Y.  
William R. DeField,  
Montgomery Ward & Co.,  
Chicago, Ill.

## Special Training Schools

J. W. Dietz, *Chairman*,  
Western Electric Co.,  
Chicago, Ill.  
J. E. Banks,  
American Bridge Co.,  
Ambridge, Pa.  
Fred R. Jenkins,  
Commonwealth Edison Co.,  
Chicago, Ill.  
W. K. Page,  
Addressograph Co.,  
Chicago, Ill.

## Retail Salesmanship

James W. Fisk, *Chairman*,  
J. L. Hudson Dept. Store,  
Detroit, Mich.  
Miss Beulah Kennard,  
105 West 40th Street,  
New York, N. Y.  
Miss Lilian Meyncke,  
The Rike-Kumler Co.,  
Dayton, Ohio.  
H. G. Petermann,  
United Cigar Stores Co.,  
New York, N. Y.  
Mrs. Lucinda Prince,  
264 Boylston Street,  
Boston, Mass.  
Ralph W. Kinsey,  
Dives, Pomeroy & Stewart,  
Reading, Pa.

## Employment Plans

E. P. Pitzer, *Chairman*,  
Equitable Life Assurance Society,  
New York, N. Y.  
N. F. Dougherty,  
The Pennsylvania Railroad Co.,  
Philadelphia, Pa.  
Philip J. Reilly,  
Dennison Manufacturing Co.,  
Framingham, Mass.  
Edward B. Saunders,  
Simonds Manufacturing Co.,  
Fitchburg, Mass.  
W. M. Skiff,  
National Lamp Works, General Electric Co.,  
Nela Park, Cleveland, Ohio.

## Public Education

E. H. Fish, *Chairman*,  
Norton & Norton Grinding Companies,  
Worcester, Mass.  
E. G. Allen,  
Cass Technical High School,  
Detroit, Mich.  
Arthur E. Corbin,  
Packard Motor Car Co.,  
Detroit, Mich.  
Arthur W. Earle,  
Winchester Repeating Arms Co.,  
New Haven, Conn.  
Miss Harriet Fox,  
Strawbridge & Clothier,  
Philadelphia, Pa.

# Committees of The National Association of Corporation Schools 1915-16—Continued

## Safety and Health

Sydney W. Ashe, *Chairman*,  
General Electric Co.,  
Pittsfield, Mass.  
L. H. Burnett,  
Carnegie Steel Co.,  
Pittsburgh, Pa.  
Arthur T. Morey,  
Commonwealth Steel Co.,  
St. Louis, Mo.  
J. C. Robinson,  
The New York Edison Co.,  
New York, N. Y.  
C. B. Auel,  
Westinghouse Electric & Manufacturing  
Co.,  
East Pittsburgh, Pa.

## Allied Institutions

James A. Roosevelt, *Chairman*,  
Roosevelt & Thompson,  
New York, N. Y.  
Norman Collyer,  
Southern Pacific Railroad Co.,  
San Francisco, Cal.  
R. L. Cooley,  
Supt. Continuation Schools,  
Milwaukee, Wis.

## Codification Committee

Harry Tipper, *Chairman*,  
The Texas Co.,  
New York, N. Y.  
T. M. Ambler,  
Brooklyn Union Gas Co.,  
Brooklyn, N. Y.  
A. Blumenthal,  
Bing & Bing Construction Co., Inc.,  
New York, N. Y.  
E. M. Henderson,  
Manhattan Rubber Manufacturing Co.,  
Passaic, N. J.  
K. W. Waterson,  
American Telephone & Telegraph Co.,  
New York, N. Y.

## Vocational Guidance

Dr. Henry C. Metcalf, *Chairman*,  
Tufts College,  
Tufts, Mass.  
C. R. Sturdevant,  
American Steel & Wire Co.,  
Worcester, Mass.  
Albert C. Vinal,  
American Telephone & Telegraph Co.,  
New York, N. Y.

## Committee on Nominations

John L. Conover, *Chairman*,  
Public Service Corporation of New  
Jersey,  
Newark, N. J.  
N. F. Dougherty,  
The Pennsylvania Railroad Co.,  
Philadelphia, Pa.  
H. W. Dunbar,  
Norton Grinding Co.,  
Worcester, Mass.  
L. W. George,  
Commonwealth Steel Co.,  
St. Louis, Mo.  
A. W. Soderberg,  
Carnegie Steel Co.,  
Munhall, Pa.

## Membership Committee

John McLeod, *Chairman*,  
Carnegie Steel Co.,  
Pittsburgh, Pa.  
F. C. Henderschott, *Secretary*,  
The New York Edison Co.,  
New York, N. Y.

There will be no regular membership committee appointed other than Chairman and Secretary, but all members of the Association will be asked to co-operate in securing new memberships.

## Class "A" Members

ADDRESSOGRAPH COMPANY, 901-11 W. Van Buren Street, Chicago, Ill.	MR. W. K. PAGE
AMERICAN BRIDGE COMPANY, Pittsburgh, Pa.	MR. J. E. BANKS
AMERICAN LOCOMOTIVE COMPANY, Schenectady, N. Y.	MR. L. L. PARK
AMERICAN OPTICAL COMPANY, Southbridge, Mass.	MR. S. W. CADY
AMERICAN STEEL AND WIRE CO., Worcester, Mass.	MR. C. R. STURDEVANT
AMERICAN TELEPHONE AND TELEGRAPH CO., 15 Dey St., N. Y.	MR. K. W. WATERSON
AMERICAN TOBACCO CO., 111 5th Avenue, New York, N. Y.	MR. J. COUGHLAN
ATCHISON, TOPEKA & SANTA FE RAILWAY CO., Topeka, Kan.	MR. F. W. THOMAS
BING & BING CONSTRUCTION COMPANY, INC., 119 West 40th St. New York.	MR. A. BLUMENTHAL
THE BRIGHTON MILLS, Passaic, N. J.	MR. H. V. R. SCHEEL
BROOKLYN UNION GAS CO., 180 Remsen St., Brooklyn, N. Y.	MR. T. M. AMBLER
BURROUGHS ADDING MACHINE CO., Detroit, Mich.	MR. F. H. DODGE
CADILLAC MOTOR CAR CO., 1343 Case Ave., Detroit, Mich.	MR. H. M. LELAND
CARNEGIE STEEL CO., Pittsburgh, Pa.	MR. JOHN MCLEOD
CHICAGO TELEPHONE COMPANY, Chicago, Ill.	MR. C. C. CURTIS
COMMONWEALTH EDISON COMPANY, 72 W. Adams St., Chicago, Ill.	MR. FRED R. JENKINS
COMMONWEALTH STEEL COMPANY, St. Louis, Missouri.	MR. ARTHUR T. MOREY
CONSOLIDATED GAS CO. OF N. Y., 4 Irving Place, New York City.	MR. WILLIAM D. KELLEY
CONSOLIDATED GAS, ELECTRIC LIGHT & POWER CO., of Baltimore, Baltimore, Md.	MR. DOUGLAS BURNETT
THE CURTIS PUBLISHING CO., Independence Square, Philadelphia, Pa.	MR. ROBERT C. CLOTHIER
THE DAYTON ENGINEERING LABORATORIES CO., Dayton, O.	MR. J. J. MUNSELL
DENNISON MANUFACTURING CO., Framingham, Mass.	MR. C. E. SHAW
HENRY DISSTON SONS INC., Philadelphia, Pa.	MR. SAMUEL H. DISSTON
DIVES, POMEROY & STEWART, Reading, Pa.	MR. RALPH W. KINSEY







# The National Association of Corporation Schools

Executive Office, Irving Place and 15th Street, New York

## Class A Members—Continued

DODGE MANUFACTURING Co., Mishawaka, Ind.....	Mr. MELVILLE W. MIX
DOHERTY OPERATING Co., 60 Wall St., New York City.....	Mr. R. G. GRISWOLD
R. R. DONNELLEY & SONS COMPANY, Plymouth Place, cor. Polk, Chicago, Ill.....	Mr. T. E. DONNELLEY
EQUITABLE LIFE ASSURANCE SOCIETY, New York, N. Y.....	Mr. F. P. PITZER
FELS & COMPANY, Philadelphia, Pa.....	Mr. MAURICE FELS
FORE RIVER SHIP BUILDING COR., Quincy, Mass.....	Mr. J. M. LARKIN
GENERAL ELECTRIC COMPANY, Schenectady, N. Y.....	Dr. C. P. STEINMETZ
THE GOODYEAR TIRE AND RUBBER COMPANY, Akron, Ohio.....	Mr. D. R. STEVENS
THE GRATON & KNIGHT MANUFACTURING Co., Worcester, Mass.....	Mr. W. VIRGIL SPAULDING
HAINES, JONES & CADBURY Co., 1130-1144 Ridge Ave., Phila- delphia, Pa.....	Mr. J. HARVEY BORTON
H. J. HEINZ COMPANY, Pittsburgh, Pa.....	Mr. HOWARD HEINZ
ILLINOIS STEEL Co., Chicago, Ill.....	Mr. T. W. ROBINSON
KOPS BROTHERS, Irving Place and 16th Street, New York City.....	Mr. WALDEMAR KOPS
ROBERT H. INGERSOLL & BROTHER, 315 Fourth Avenue, New York City.....	Mr. J. WILLIAM SCHULZE
THE JEFFREY MANUFACTURING COMPANY, Columbus, Ohio.....	Mr. W. A. GRIEVES
LARKIN COMPANY, Buffalo, N. Y.....	Mr. WILLIAM R. HEATH
THOMAS MADDOCK'S SONS' COMPANY, Trenton, N. J.....	Mr. J. T. SPICER
THE MANHATTAN RUBBER MFG. Co., Passaic, N. J.....	Mr. E. M. HENDERSON
METROPOLITAN LIFE INSURANCE Co., New York, N. Y.....	Dr. LOUIS I. DUBLIN
THE MIDVALE STEEL Co., Philadelphia, Pa.....	Mr. R. B. LINDSAY
MONTGOMERY WARD & Co., Chicago, Ill.....	Mr. WILLIAM R. DEFIELD
THE MOUNTAIN STATES TELEPHONE & TELEGRAPH Co., Denver, Colorado.....	Mr. R. B. BONNEY
NATIONAL CASH REGISTER Co., Dayton, O.....	Mr. H. G. CARNELL
NATIONAL CLOAK AND SUIT Co., 203-17 West 24th St., New York City.....	Mr. GEORGE B. EVERITT
NATIONAL LEAD COMPANY, 111 Broadway, New York City.....	Dr. D. LOUIS IRETON
NATIONAL TUBE COMPANY, Pittsburgh, Pa.....	Mr. TAYLOR ALLDERDICE
NEW ENGLAND TELEPHONE & TELEGRAPH COMPANY, Boston, Mass.....	Mr. E. M. HOPKINS
NEWPORT NEWS SHIPBUILDING & DRY DOCK Co., Newport News, Va.....	Mr. E. O. SMITH
THE NEW YORK EDISON COMPANY, Irving Place and 15th St., New York City.....	Mr. ARTHUR WILLIAMS
NORTON & NORTON GRINDING COMPANIES, Worcester, Mass.....	Mr. E. H. FISH
OREGON SHORT LINE RAILROAD, Salt Lake City, Utah.....	Mr. L. E. ABBOTT
OTIS ELEVATOR COMPANY, 11th Ave. and 26th St., New York City.....	Mr. R. S. BALDWIN
PACKARD MOTOR CAR COMPANY, Detroit, Mich.....	Mr. A. E. CORBIN
THE PENNSYLVANIA RAILROAD Co., Altoona, Pa.....	Mr. JACOB YODER
PHOENIX MUTUAL LIFE INSURANCE Co., Hartford, Conn.....	Mr. H. A. HOFF
THE PRUDENTIAL INSURANCE COMPANY OF AMERICA, Newark, New Jersey.....	Mr. FRED W. TASNEY
PUBLIC SERVICE CORPORATION OF N. J., Broad and Bank Sts., Newark, N. J.....	Mr. JOHN L. CONOVER, JR.
REMINGTON ARMS-UNION METALLIC CARTRIDGE Co., 233 Broadway, New York City.....	Mr. C. L. REIERSON
REMINGTON TYPEWRITER COMPANY, 327 Broadway, N. Y. City.....	Mr. F. E. VAN BUSKIRK
THE RIKE KUMLER COMPANY, Dayton, Ohio.....	Miss L. MEYNCKE
THE H. M. ROWE COMPANY, Baltimore, Md.....	Dr. H. M. ROWE
THE SCHWARZENBACH, HUBER Co., West Hoboken, N. J.....	Mr. VIOLA
THE SELBY SHOE Co., Portsmouth, Ohio.....	Mr. W. D. GILLILAND
SIMONDS MANUFACTURING COMPANY, Fitchburg, Mass.....	Mr. EDWARD B. SAUNDERS
SOUTHERN BELL TELEPHONE AND TELEGRAPH COMPANY, Atlanta, Ga.....	Mr. KENDALL WEISIGER
SOUTHERN PACIFIC COMPANY, San Francisco, California.....	Mr. NORMAN COLLYER
SOUTHWESTERN BELL TELEPHONE SYSTEM, St. Louis, Mo.....	Mr. B. S. READ
THE SPIRELLA COMPANY, Meadville, Pa.....	Mr. W. W. KINCAID
STANDARD FASHION COMPANY, 16 Vandam St., New York City.....	Mr. JOHN T. SCANLON
STATE TRADE SHOPS OF CONNECTICUT, New Britain, Conn.....	Mr. F. J. TRINDER
JOHN B. STETSON COMPANY, Philadelphia, Pa.....	Mr. MONT H. WRIGHT
STRAWBRIDGE & CLOTHIER, Market, Eighth and Filbert Sts., Philadelphia, Pa.....	Mr. HERBERT J. TILY
SWIFT & COMPANY, Union Stock Yards, Chicago, Ill.....	Mr. E. L. WARD
THE TEXAS COMPANY, 17 Battery Place, New York City.....	Mr. H. TIPPER
TRAVELERS' INSURANCE Co., Hartford, Conn.....	Mr. LOUIS N. DENNISTON
TROW PRESS, 201 East 12th St., New York City.....	Mr. THOMAS B. SHEEHAN
UNITED CIGAR STORES Co., New York, N. Y.....	Mr. H. G. PETERMANN
UNITED STATES CAST IRON PIPE and FOUNDRY Co., Burling- ton, N. J.....	Mr. N. F. RUSSELL
THE WARNER BROTHERS COMPANY, Bridgeport, Conn.....	Mr. L. T. WARNER
THE WARNER & SWASEY COMPANY, Cleveland, Ohio.....	Mr. KENNETH W. REED
WESTERN ELECTRIC COMPANY, Hawthorne Station, Chicago, Ill.....	Mr. J. W. DIETZ
WESTERN UNION TELEGRAPH Co., 195 Broadway, New York, N. Y.....	Mr. J. K. BRUGHLER, JR.
WESTINGHOUSE AIR BRAKE COMPANY, Wilmerding, Pa.....	Mr. C. H. SMITH
WESTINGHOUSE ELEC. AND MFG. Co., East Pittsburgh, Pa.....	Mr. C. R. DOOLEY
WESTINGHOUSE MACHINE COMPANY, East Pittsburgh, Pa.....	Mr. C. F. CAREY
WILLIS-OVERLAND COMPANY, Toledo, O.....	Mr. WILSON M. TAYLOR
WINCHESTER REPEATING ARMS COMPANY, New Haven, Conn.....	Mr. ARTHUR W. EARLE
YALE & TOWNE MFG. Co., Stamford, Conn.....	Mr. A. P. BARDWELL

Publications of  
**The National Association of Corporation Schools**

Headquarters, Irving Place and 15th Street New York

Proceedings of first annual convention The National Association of Corporation Schools, including proceedings of the organizing convention, about 440 pages, cloth bound. Price to Class "A" members, \$1.50. Price to other than Class "A" members, \$2.50—plus postage or express charges.

Proceedings of the second annual convention of The National Association of Corporation Schools, including reports and bibliographies, 702 pages, cloth bound. Price to Class "A" members, \$2.00; to libraries, \$3.50; to other than members or libraries, \$5.00—plus postal or express charges.

Proceedings of the third annual convention of The National Association of Corporation Schools, including charts, maps and tables, about 1,000 pages, cloth bound. Price to Class "A" members \$3.50; to libraries and colleges, \$5.00; to other than Class "A" members, libraries and colleges, \$7.50—plus postal or express charges.

---

Remittance should accompany order, as the Association does not desire to open special accounts. Make remittances to the order of the Treasurer.  
Send all orders to the Executive Secretary.



THE TROW PRESS  
NEW YORK